

#### Language of Non-Literary Texts in-depth reportage podcasts

This course is quite pioneering, not only because of the worldwide pandemic and perennial natural calamities but since it is already a new age of major course under the English Language Studies curriculum. ELS 111 or Language of Non-Literary Texts is not meant to replace journalism subjects the AB English students used to have such as editorial and feature writing, technical writing, creative non fiction or creative writing combined with literature subjects (World, Anglo-American, Afro-Asian or European). But for all intents and purposes, ELS 111 is for a more indepth and investigative field of studies about a whole range of topics, it focused only on the environment, climate and ecological worldview. With the use of a host of tools like documentary, mobile journalism, photojournalism, or some other new age way of doing things, it was decided to take an older but a more aural medium of podcasting. It benefited from the National Conference on Investigative Journalism from the leading institution since 1989, the Philippine Center for Investigative Journalism has been established for a newly restored democracy in the country. With the onset of the pandemic, there was also this kind of infodemic that is plaguing public discourse and the advent of online and internet-based reporting. The cure of fake news during this times would be a robust, in-depth and data-driven reporting. Built on a lockdown situation and enhanced and modified community quarantine, ELS 111 was designed to suit the new normal and flexible learning modalities. Language of Non-Literary Texts dwells on the hope that while combating the raging pandemic and natural calamities along with climate crisis, BA ELS learners would be able to adapt and gather data, process the useful information and transform knowledge into wisdom based on ecological practices and sustainability parameter. Likewise, since learners from 15 to 65 are discouraged to go out for safety and health reasons, in-depth reportage on natural, ecological and environment would be more suited to the situation. Even the expected deliverables like annotated bibliography or material sources would be the basis of podcast episodes written and produced by the learners for future generations as a testament against malinformation, disinformation and mistruths.

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# **ABSTRACTS**

The Case Study of Marcopper Mining: Digging Into Its Best and Worst Aftermath

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**AB-ENGLISH 3A** 

#### **Abstract**

Marinduque province was once a simple and healthy island. Living peacefully, residents were relying mostly from agriculture and fishing as their primary source of food - not until mining companies were given permission to operate in the poor island.

Marcopper Mining Corporation was one of the largest company that operated in the province. It was co-owned (40%) by Placer Dome, a Canadian company and was the one to manage the corporation, (Coumans, 1999). Marcopper corporation had operated for over 30 years, starting in the year 1969. From then they employ over 1,000 people as a work force and mostly of them are from the island. They have also provided \$30 million dollar a year for local goods and services as well as the electricity for the province (Hamilton-Paterson, 1997). However, this act did not hide the fact that the environment was badly abused and mine pollution has hugely affected the lives of people in the community, but still their voices remain unheard. Robles stated that the company was given a grant by the DENR to continuesly operate despite the petition of the residents against its operation. Mt. Tapian was the first site location of Marcopper, and operates using an open pit method to produce copper concentrate. Later move out in San Antonio not too far from the first site after it depleted. Until Marcopper Mining Corporation disaster happened in March 24, 1996. It was one of the largest mining tragedy in the history, leaving the place almost unrehabilitated.

Twenty-four years had gone by since a "badly -sealed drainage tunnel" in Marcopper Mining Corporation had ruptured. Unfortunately, even up to the present day, the worst effects it gave is undoubtedly evident. The 1.6 million cubic meters of toxic mine tailings that flooded villages and killed marine life is still unsolvable.

Mine tailings remain in the Tapian pit, where the spill originated on March 24, 1996 and caused one of the worst environment disasters in the Philippines. The horror of Barangay Hinapulan was buried in six feet of muddy floodwater, relocating 400 families. Cows, pigs and sheep including pets were infected leading to their death. Crops were ruined. Boac River, a source of sustenance for surrounding communities, was declared unsafe. Soon after the mining disaster, the United States Geological Survey said in a study that the Makulapnit and Maguila-guila siltation dams were in danger of collapsing. Moreover, the Boac River had been declared biologically. A dike had been built to prevent it from overflowing where there are heavy rains. Meanwhile, up to these

days, Tapian and San Antonio pits may look like serene lakes surrounded by lush trees but in reality, the bluish green water is highly toxic and extremely dangerous for it can extinguish productive ecosystems.

There is no more heartbreaking to the fact as to how this story is redundantly passed on year after year but sadly, has not have been solved. Fear that the worse of what happened and what is still to come still lingers on every citizen of Marinduque. The historic pollution brought by the Marcopper Mining Disaster was a nightmare to all Marinduqueños. But the threat to the ecosystem, health, and safety up to this day is still undeniable. Back to the days where people were moved and united as they call for justice especially to those who severely affected and suffered from various ailments where doctors claimed as exposure to the toxic environment. As MAC (mines and Communities) stated, the Kalikasan People's Network for the Environment (Kalikasan PNE) expresses deep solidarity with the people of Marinduque Council for Environmental Concerns and the people of Marinduque in their steadfast stand to fight justice in the landmark case of the Marcopper mining disaster. About ten thousand Marinduqueños were gathered at the Boac Capitol to stop the impending case settlement by the provincial board with the company responsible for the environmental crime. Also, the Sangguaniang Bayan of Boac, a solidarity with Marinduqueños, showed their support as they joined the mobilization in front of the provincial capitol to request the Sangguniang Panlalawigan to re-negotiate the terms and conditions of the settlement agreement offered by Barrick Gold to ensure the welfare of the environment and the people of Marinduque. They made a resolution that expresses the position of the Sangguniang Bayan of Boac, which was read during the rally and later on personally delivered by the Boac Councilors at the Office of the Sangguniang Panlalawigan and the Office of the Governor.

The historic pollution will surely never be forgotten as the memory of the tragedy continue lives in the hearts and minds of each and one Marinduqueños. It is deeply devastating looking back even just a glimpse of it.

Keywords: Disaster, Environment, History, Marcopper, Marinduque, Mining

### PUPUWA PENITENCE: A PIERCING SACRIFICE OF WOMEN

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#### PUPUWA PENITENCE: A PIERCING SACRIFICE OF WOMEN

According to UNESCO, social practices, rituals, and festive events are habits and tradionalized activities that showcases the lives of communities and groups that are shared and practiced by the members of the said community. Rituals often take place at special times and places which are relevant to the community's belief. One of the most notable practices by Catholics, if not, is the holy week practices. Holy week is crucial in a church year. It is a time where people celebrates the life, death, and resurrection of Jesus in the most notable and festive way. The holy week, or Mahal na araw in Tagalog, and Semana Santa in Spanish includes five days of special significance (Duigman, ND). However, the most special for Catholics is the Eastern Triduum. Triduum comes from two latin words, tres and dies which means 'a space of three days' - Holy Thursday, Good Friday and Holy Saturday.

In Marinduque, a Southern Tagalog Region province, with the population of 34, 828 on 2015 census, known as "The Lent Capital of the Philippines" is a home of precious holy week practices that are still celebrated then and on. Hearing the word Marinduque, mirrored the rites of Moriones Festival, which was known around the Philippines. It was known as a holy week practice in Marinduque. But, there are other holy week practices needs recognition as it mainly has a mark on its people, culture, heritage and belief of Marindukanon. One notable lenten rites in Gasan, Marinduque is the pupuwa or "pagsusunong ng pupuwa." It is an intangible cultural heritage of Marinduque because of how people of Gasan, recognize its importance and impact on the community. Pupuwa is a kind of sacrifice, a penance or penitence in which women devotee of Gasan do in exchange of favor or blessing they seek to God. This kind of sacrifice has been present even in the past, and even in biblical times. Pupuwa devotee wears a long black dress which symbolizes mourning, a crown made of pupuwa leaves or grass which has a piercing sensation on the devotee. They are also barefooted while holding a candle during 5 in the afternoon of Good Friday.

This practice needs a strong determination and commitment. According to Fr. Sapungan, pupuwa is a part of sacrifice, a petition, and a thanksgiving. In order to seek a blessing from God, they have to do sacrifices, and pupuwa is one of way of doing it. Pupuwa devotee are asking for a guidance, miracle, and a favor. They are offering a prayer or sacrifice that they think in a span of time, or certain period of time, they will get what they want, or what they prayed for. Doing pupuwa is

more than just a practice, and more than just a ritual. Wearing a pupuwa leaves in devotee's head

is not easy. It has a feeling of uncomfortability because of the piercing sensation, but, they have to

endure it because they are asking for a favor. Grace builds on human nature. Grace needs human

cooperation in order to be effective. God is not asking for any exchange of graces people have

taken but, as a means of debt of gratitude for all the blessings people have received, pupuwa

devotee gives sacrifice in a certain period of time.

Pupuwa is a penitence of women. Women which has a strong determination and vow. Devotee are

faithful in their promise regardless of any condition. According to Mrs. Sales- Mason, a pupuwa

devotee since 1991, doing pupuwa is a a repentance and a thanksgiving. She joined pupuwa as a

sign of thanksgiving to the blossoming health of her family. On the other hand, Mrs. Malimata, a

devotee for seven years, joined pupuwa because of his son. She prayed for his son's sickness to

vanish and as a miracle it may be, his son's hepatitis fade, and now a happily married man.

Pupuwa or "pagsusunong ng pupuwa" is more than everything about its meaning. This wouldn't

be named as an intangible cultural heritage of Marinduque for nothing. This proves that pupuwa

is deeply rooted in Gaseños culture up to this day. This penitence is an another way of saying that,

in every favor or blessing, there should always be a sacrifice.

**Keywords**: Ritual, lenten, pupuwa, penitence, sacrifice, holy week, Marinduque

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# Caving System: Archeological Facts of selected caves in Marinduque

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#### **ABSTRACT**

Over the past decades, Philippines is one among those country with numerous discoveries of caves and even until in the present time, there is still a lot to be discovered. The Republic Act 9072 is an act that declared that caves and all natural creations within the premises of the country/ies are considered as natural wealth and it is essential to ensure its protection and preservation. Caves have significant role in the past years of human life existence. In fact, they are well known as home and shelter to all living creatures particularly to human being and animals. People of the old era use caves to protect themselves from natural disasters and environmental phenomena and habitation in their period of human occupation. Even before, the origin of the cave was already a part of nature's magnificent sculpture during the Cretaceous Epoch Era.

Marinduque province is also known for its caves and rock formation. Way back 1983, the National Museum conducted an archaeological survey in the municipalities of Torrijos, Gasan, and Sta. Cruz. The survey and assessment for these caves were interesting as it is resulted in the discoveries of human bones inside the caves. This instances indicates that caves were used for burial purposes on the previous era. The caves and rock shelters including underwater archeological sites are potential ecotourism sites. However, there is a need to inform stakeholders, policy makers, concerned government agencies and institutions on topics like proper cave management, national ecotourism priority areas, standardization of caving skills and other activities that will ensure its protection and preservation for the future generations of Filipinos. There are forty-one (41) caves discovered and revealed by the National Cave Committee in the province of Marinduque. But, this report will focus on the four (4) selected caves in the province. The researcher selected the four familiar caves in Marinduque namely; Ka Amon Cave in Torrijos, Bathala Cave and Bagumbungan Cave in Sta. Cruz, and Tarug Cave in Mogpog.

This in depth report aims to discover the hidden treasures that can be found inside the caves. It further seeks to the significance of caves in the environment and to the endangered species inside it, together with its significance and important role that play in archaeology, culture, and tourism of the Philippine history. The researchers used different search engine and refer to links and sites in gathering information needed in this report.

Keywords: archeological, caves, environmental phenomena, ecotourism, culture, shelter, species,

archaeology, preservation, rock formation, sites, habitation, environment,

CONTENT

The Province of Marinduque, is known to be the heart of the Philippines. It is a heart-shaped island

which can be found in the Southern part of Luzon which is popular known for having rich culture

and tradition, native delicacies together with different magnificent t/,kourist attraction that can be

explore and experience by the tourists, and visitors that was fond of hiking, mountain climbing,

exploration and discoveries. Some of its magnificent tourist attraction that the tourist come to visit

are the different caves or caverns and rocks formation from the different municipalities of

Marinduque. The four selected caves in the reports are:

Bagumbungan Cave

Bagumbungan cave confines at Sitio Puti, Barangay San Isidro and Barangay Punong in

Municipality of Santa Cruz. It is known as religious sects inhabited cav. Bagumbungan

underground river cave was classified as class II. It is a 1.9 km long and some part are still

unexplored. Bagumbungan underground river Cave was discovered by the locals who used to

collect the edible nest of swiftlet that is used for making bird's soup, cave enthusiast and tourism

officer. Some are the biodiversity that can be found inside the cave are the following:

Owl

Typical limestone formation

Eagle-like limestone formation

Angel-wings limestone formation

Mermaids- tail like limestone formation

Tooth- like formation

Pilgrimage

Kissing animals like rock formation

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**Stalactites** 

Saw-like limestone formation

Chandelier and candle like formation

**Bats** 

Shrimp

Crab

Eel

Catfish

Blue worm

Waterfalls

Basin entry point

Water basin

Bathala Cave

Bathala cave is located at barangay Ipil, Santa Cruz Marinduque a cave system on the jungle clad mountain side of Marinduque. It is comprising of seven (7) areas, but only four are open for public namely; church, secret, python, and cemetery caves. Church cave is the biggest cave with stalactites and stalagmites which resembles to the church interior. Python cave is known for the pythons with 7 to 9 feet long resting on the walls and hundreds of big bats and cockroaches. Skeletal structure of snakes and skin can also be found inside the cave. Cemetery cave is where human bones, pieces of China, and earthen jar can be found believed to be the remains of war. Overall it features large church like interiors. Archaeological cave, and phython cave.

Ka Amon Cave

Ka Amon Cave is exactly located at Eastern part of the island of Marinduque. Specifically, in Brgy. Bonliw, Torrijos, Marinduque. The cave was less than 200 meters from the national road and is under the management of Community Based Rural Tourism Program. The name "Ka

Amon "was derived from the owner of the property, Ramon Monterey, a generous son of Torrijos. Ka Amon Cave is part of the Bonliw Cave Complex being assess and classified by the Provincial Assessment Team (PCAT). The cave was sub-divided into two parts which is the KA Amon Cave 1 and 2. Ka Amon Cave 1 has been categorized by PCAT under class 1, because cave in this class possess fragile geological formations, species, archaeological and paleontological value. On the other hand, Ka Amon cave 2 has been also classified under class 2, which is only open to experienced cavers and tourist that was guided by educational tours and for visiting. Cave under this category contains sensitive geological, archaeological, historical, cultural and biological features. But what makes this cave sounds interesting? Ka Amon Cave could offer random of hidden treasures as the site inspection resulted in the discovery of remnants of human skeletal near the cave's entrance.

According to the ABS-CBN Southern Tagalog news, the skeletal gone under a DNA test. And the result found out that it was a remain and human bones of "ancient people". The human skeletal were traced its origin during the pre-Hispanic Filipinos long time ago. There are also written numbers and date in the other parts of the cave. That serve as one evidence that the cave might be used as habitation of the previous era of human being since people in the earlier period usually live in the cave wherein they also conduct a thanks giving celebration, and even a feast inside of it. The cave seems like perfectly created because of its immaculate flowstones and fruit bats thrives placed in its chambers accordingly.

The Ka Amon Cave is sub-divided into two (2) parts. In Ka Amon Cave 1, there are species that can be located like fauna together with the fragile ecosystems that was one of the mysterious places inside the cave. On the other hand, Ka Amon cave 2 has features that tell great stories about the life before and the humankind that makes the cave sound interesting and mysterious. In the first chamber of Ka Amon cave there was human bones and skeletal pieces located it is being mixed with broken potteries which is accordingly an evidence of ancient origin. It is said that Alfred Marche visited the island in 1881 to conduct his first systematic archaeological exploration. And Ka Amon was one of those many grottos he visited and explored. The next cave hidden treasure was the flowstones. Flowstones is a mineral deposit found in "solution" or commonly called caves in limestone. It is commonly form because of a flowing films of water that move along the floors or down positive-sloping walls that build up a layers of calcium carbonate (calcite), gypsum, or

other cave minerals. It is believed that it takes a million years to develop flowstones. Another thing is the speleothems (a secondary mineral deposit located inside the cave) and says to be related to ancient people. Are secondary mineral deposits formed in caves by flowing, dripping, ponded, or seeping water. The most commonly occurring minerals are calcite, aragonite, and gypsum although many other minerals have been found in speleothems in minor amounts.

The other chamber of the cave featured some decorative dripstones, stalactites, stalagmites, columns and the large- sized mermaid statue that was place in the rock that seems like it was guarding the chamber of the caves. There were also skylights, rendering degrees of illumination that can be seen in three of the seven chambers inside the caves. Another remarkable feature that can be located inside the Ka Amon Cave is the altar room, where 1they inscribed image of the Virgin Mary can be looked at. According to local stories, the resident of Torrijos continues to view the cave as sacred of Christianity. The largest chamber of the cave is not open for public and doesn't available to use for social gatherings. There was also a part of chamber that was available for bat/s. It is a winged- mammals, that commonly live and located inside the caves. This kind of animals and other creatures was believed to be the one who sustains life in the cave. There are also chambers of the cave that was not allowed to enter and not open to public especially to tourists who wants to explore and find out what the hidden treasure was inside the cave it is due to lack of oxygen inside, and the space is not that enough to enter.

It was 7 years ago when the Community Based Rural Tourism Program members had planned of putting up a zip line on one part of the cave that will served as the exit point after entering the cave. However, tourist or visitors are prohibited to enter inside the cave without a tour guide to ensure their safety and to maintain the cleanliness of the cave.

#### Tarug Cave

Tarug cave is located inside the municipal forest park. Tarug cave can be access via the barangay road. The caves are small and don't have deep chambers. But it offers a 300 feet tall limestone's walls going to the top. Excellent for rock climbers and rappelling.

#### Significance of Caves

Caves play a significant role in the environment. They are important natural resources because of their unique beauty, their history, and their role in helping the environment. They play key roles

in the ground water movement, serve as habitat for threatened and endangered animal species, and often yield the bones of pre-historic animals as well as the artefacts of pre-historic man. They provide outstanding opportunities for studying and gaining a better outstanding of cave landscapes, and their relationship between the environment we see at the surface and the one that is hidden underground. Today caves use mainly for scientific research and recreation. Researchers study the underground movement of water through caves to help prevent grand water wells from becoming polluted. Animals found deep in caves are study to see how they survive with so little food and no light. Rare and endangered cave animals are studied and protected. Some caves provide researchers the opportunity to uncover artefacts and other evidence that provide clues to aspects of the daily life of early humans that inhabited them. Caves also provides an opportunity to study fossils and tracks left behind by animals that use them in the past. It has a potential of becoming ecotourism site, thus, it needs to improve some of its features together with the area and preserve the hidden treasures inside of it. It also had significant role in the past years of human life existence. In fact, they are well known as home and shelter to all living creatures particularly to human being and animals. People of the old era use caves to protect themselves from natural disasters and environmental phenomena. Even before the origin of the cave was already a part of nature's magnificent sculpture during the Cretaceous Epoch Era even before Marinduque finally rose from the sea about a million years ago. Proper management, protection, and preservation is all that the caves need as of now.

#### PUTONG: Flora and Fauna in the Culture and in the Environment of Marinduque

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#### **ABSTRACT**

#### PUTONG: Flora and Fauna in the Culture and in the Environment of Marinduque

Marinduque is a home of vibrant hues of unique culture and traditions. As the province is blessed with diverse cultural heritage, the province is also blessed with natural riches. Ancestors tried their best to pass these treasures from one generation to another. These intangible and tangible legacies are the patterns the Marinduque has been shaped on for centuries. Thus, the shapers are to be praised for they did and still doing a good job to preserve these riches endemic in the geographical heart of the Philippines. One of these century-practiced and embraced culture in the province is the "Tubong" or "Putong" which is indigenous to Marinduque. As much as Putong serves as a unique custom of welcoming and honoring people, Putong also mirrors the natural riches of Marinduque as it features flora and fauna before, during, and after the ceremony.

According to the mixed culture, the Tubong or Putong originally means "to crown". The ceremony starts with the mamumutong, a group of men and women singing greetings to the honoree. Calling the latter santo, the mamumutong sings and dance in quickening rhythm in front of him, showering him with flowers and coins as a sign of affection. A crown and garlands/boquets are given to the honoree. Friends, relatives, and tenants of the honouree gather together, prepare gifts and food, invite or hire musicians, and make a crown of flowers for the honouree. The crown honoured by the guests is made up of nito or tinfoil with flowers designed in front. Since the ancient times, the language of flowers and herbs was well-known, with each carrying its own meaning. In antiquity, flower crowns were typically worn on festive occasions and on holy days. Wearing flowers as a headpiece has a rich history, dating back to the ancient classical world (Carruthers, 2017). And the usage of flowers of all colors and all kinds in Filipino occasions can be dated back to 333 years of Spanish colonization. We see flowers in the crown as a reminder of the ancient Mediterranean world. As much as these flowers are important by providing aesthetic and serving a symbolic representation in Putong, they have a major role together with the other flora and fauna in maintaining the balance of the ecosystem by benefiting from one another and by both benefiting the human race.

In this era, humans find more time to interact with gadgets than they do to interact with nature. With the changing human conditions, flora and fauna suffer and face a race against time. Humans

must find a way to protect and maintain these floras and faunas by planning out how they will be able to coexist with humans in urban and rural areas.

Based on biology article "Introduction to Flora and Fauna" flora pertains to all plant life, meaning, flowers are basically a part of the flora world. The Philippine flora is composed of at least 14000 species, representing five percent of the world's flora (DENR-PAWB, CI, & UPCIDS 2002) It was said that biosphere reserves, national parks, zoos, and sanctuaries are few of the measures taken by the government for conservation of flora and fauna. This fact, gave our group the idea of emphasizing the cultural role of flowers and plants, particularly in the 'putong' or 'tubong' tradition in Mogpog or Marinduque as a whole, rather than plainly focusing on the practice alone. As flowers and other plants as well as different species of animals play a critical and vital role in maintaining the equilibrium of the ecosystem, we believe that they both play an important role also in many of the Philippine culture and tradition, especially in the known 'putong' or 'tubong' tradition of Marindukanons. The study also emphasizes the reasons of the suffering of these flora and fauna. Thus, recommending ways to preserve and protect them. Basically, the aim of this indepth report is to find out if there are specific flowers or plants that are used in putong or tubong and whether these flowers and plants together with the fauna that they feed on are still abundant or already extinct. And most importantly, to find out if these flora and fauna can possibly affect the preservation or the continuity of the long-standing tradition of the putong or tubong in case they do now belong to the growing number of the endangered species of flora and fauna.

`Keywords: Tradition, culture, putong, flora, fauna, preservation, protection

# PROPAGATION OF KWATINGAN OR BAYOG TREE: AN ACTION ON THE DECLINING NUMBERS OF ENDEMIC KWATINGAN OR BAYOG TREE OF MARINDUQUE

#### **An Abstract**

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AB English 3

# Propagation Of Kwatingan Or Bayog Tree: An Action On The Declining Numbers Of Endemic Kwatingan Or Bayog Tree Of Marinduque

For the span of seven decades, kwatingan or bayog tree has been used in creating the known two piece musical instrument of Marinduque called Kalutang. Basically, these trees are endemic to the province that propagates by seeds with a maximum height of 25 meters and a diameter of 70 cm and grows widely on primary and secondary forest at low and medium altitudes nearby waterways through its winged seeds. According to Maestro Terso Serdana, kwatingan or bayog tree are the only tree that makes precise melodies for kalutang. With the demand and flourishing industry of Kalutang instruments in Marinduque; the supply of raw materials from this tree is a top priority to be able to produce high-quality instruments. Moreover, the production is therefore a potential source of income for agroforestry farmers and to the province. In connection to this, to be able to meet an increasing demand for the suply of Kalutang instruments and in support for the approved drafted proposal to the National Commission for Culture and the Arts (NCCA) for the preservation of the art of kalutang playing there is a need to establish vegetative propagation of kwatingan or bayog tree recognizing the need to preserve, protect and promote this musical tradition and to ensure that the art is handed down to the next generation. Thus, following future research thrusts and priorities are out lined accordingly to survey in kwatingan/bayog tree rich areas and assessment of its biodiversity, selection of on the basis of end uses for kalutang and identification of priority-species for conservation, standardization of vegetative propagation technique (Micro and Macro) for large scale of afforestation and involving forest dwellers in kwatingan/bayog management and utilization for sustainable use.

#### Keywords:

kwatingan or bayog, Kalutang, propagates, biodiversity, species, provenance, propagation, afforestation, reproductive biology, orchard, , ethno-biological.

# **ANNOTATED BIBLIOGRAPHIES**

#### **Marcopper Mining Disaster in Marinduque Effects**

#### **Annotated Bibliography**

#### Dizon N., (2019), The Marcopper Disaster: A Tragedy that Continues in People's Veins

The author, Nikko Dizon, had discussed as to what had happened on March 24, 1996 had greatly impacted Mogpog, Boac, and Sta. Cruz towns of Marinduque and even up to the present times, still live with the effects of the disaster that happened 23 years ago. This is all because a fracture in the drainage tunnel of Marcopper Mining Corporation's Tapian pit spilled more than 1.6 million cubic meters of toxic mine tailings, flooding villages and poisoning the Boac River. Some of the effects discussed are the following: (1) Number of residents have suffered from various ailments that doctors attribute to exposure to their toxic environment. (2) Six heavy metals were found contaminating the environment and which humans can ingest: lead, arsenic, mercury, cadmium, copper; and chromium or LAMCCC in Mogpog, Boac, and Sta. Cruz, the three towns most affected by Marcopper's mine wastes. (3) The water that runs through the Mogpog river has a high acidity level that not even carabaos drink from it. (4) He said the contaminated environment that has not been rehabilitated remains a threat to residents. Even just regularly breathing air tainted with heavy metals can harm one's health, experts said. (5) Heavy metals irritate the skin, with most patients complaining of itch as well as dark spots and white patches on their legs and feet as per the stement of Ash Semilla, a nurse at the DOH-Marinduque health office. (6) Catherine Coumans, research and Asia-Pacific program coordinator of Mining Watch Canada said that the worst environmental impact from Marcopper's mining comes from the mine sites yet to be rehabilitated. She said the San Antonio pit has been filled up and overtopped with toxic water. The remaining mine wastes of both the San Antonio and Tapian mines are "exposed and contained—in Calancan Bay—where more than 200 million tons of mine waste have destroyed reefs and continue to erode off the causeway in an ongoing slow spill into the ocean.

#### **Environmental Justice Case Study Marcopper in the Philippines**

This paper looks into the decade long case of Marcopper and how these mining corporation has been operating on Marinduque Island. The mine operations there have caused innumerable troubles; serious health and environmental problems putting a large scale of the community at risk. As such that the island of Marinduque is a very poor area and relies heavily on agriculture and fishing, this case study stated how unfortunately, there is no solution that can erase the damage that has been incurred. Specifically, the people who are most affected are instead looking for the following: (1) Maintain the closure order against Marcopper so they cannot operate again. (2) Require Marcopper/Placer Dome to compensate them for the time since 1996. (3) For Marcopper/Placer Dome to set up a Health Trust Fund. (4) Immediately proceed with Marcopper/Placer Dome's best option to rehabilitate Boac River. (5) Ensure the Tapian Pit will not leak again. (6) Collect unpaid taxes from Marcopper/Placer Dome. (7) Conclude the criminal cases against Marcopper/Placer Dome. (8) Investigate means of intervention for the affected community people. In this paper it was stated the hopes as to there is no way the problems Marcopper has caused can be completely solved but the community is working to secure what they can to make up for the pain and suffering they have endured.

#### De la Cruz G., (2017), Look Back: The 1996 Marcopper Mining Disaster

In this article, De La Cruz had comprehensively pin pointed particular key points with linkages to the Marcopper mining tragedy. These are the following:

"An Act of Nature?" - Marcopper, which was then co-owned by Canadian firm Placer Dome, started its copper mining operations in Marinduque island in the late 60s but there is statement that the company had already been dumping mine tailings into bodies of water. Despite this, DENR renewed the company's mining permit, on condition that Marcopper stops throwing mine tailings into the river. To comply with the requirement, Marcopper used one of their old open pit mines as their dam, where they could keep all their mine tailings. As time passed by, the dam was being filled with mine tailings. This brought pressure to the tunnel, causing seepage of the mine waste. Then, a minor earthquake happened. A week after, the tunnel was ruptured. And the unimaginable

had happened. However, Marcopper blamed the earthquake for the damage, saying that the rupture was caused by an "act of nature."

"Criminal Negligence" - Mining sites are supposed to be earthquake- and flood-proof. However, it has been found out that Marcopper did not spend enough money to make sure their mining site complied.

The paper also tackled that despite glaring damages and reports of sickness, Marcopper claimed that the spills were non-toxic. But eventually, the company closed and the mining operations stopped. However this incident surely saw 2 to 3 million tons of mine waste spilling into the Boac River, caused flash floods that buried villages, about a third or 20 out of 60 villages had to be evacuated with approximately 20,000 people affected. Likewise, as the agricultural and marine life got severely affected, the government declared Boac River dead. Nearby villages lost one of their major sources of livelihood.

#### Sta. Brigida L., (2017), Reflections on Marcopper and Mining

Sta. Brigida in this article had shared as to what she thinks regarding the Marcopper Mining in Marinduque. She stated how this incident up until now is still an on-going concern even leaving the readers a thought, "How can the Philippine government prevent environmental tragedies like the Marcopper mining disaster from recurring while encouraging capital investments in the country?" Additionally, she statuses how Marcopper case is an issue on environment and public health wherein the general public is always the underdog. The case presented a clear existence of violation yet after decades was not yet resolved nor given priority on how to avoid such incident in the future.

Brigida even shared her view as to how the government that should have been representing its people seems to neglect its responsibility on covering the welfare of its territory and the populaces; corruption appears rampant and personal agenda took precedence over national interest. The Philippine Mining act remain as it is, giving way on taking advantage on the weakness on most of the provisions.

This paper has hopes that may the case of Marcopper tragedy awakens humanity on seeing other people suffering and kindles our love for nature and urges the government in implementing a strict law relating to exploitation of natural resources. That the likes of responsible mining can exist; that we have the responsibility to the future generations to provide a better place to live. We must realize that nature is not ours to own but rather to care for to ensure that everyone benefits. And in taking care of nature, we can all enjoy the advantages the environment bestows while paying our respect to Mother Earth.

#### **Marinduque Mining Disaster**

The content of this article discusses regarding the effects of Marcopper Mining Corporation which includes: (1) how the fish catch was adversely reduced to barely 2 kilos from 23 kilos per day because it was affected by the tailings discharge that started in the 1970s. (2) Fisherfolk and their families are now suffering from extreme poverty, miserable illnesses and unnecessary deaths due to the wide-scale destruction of the bay. (3) Fish and marine products are contaminated with toxic metals. Likewise, (4) since 1981, increasing complaints of leukemia, kidney problems, diarrhea, skin diseases, several other maladies, and even death among children and adults have been reported. But most were diagnosed as common diseases until serious toxic tests made in 1996 and indicated that high levels of heavy metals are in the blood of complaining patients.

#### Coumans C., (2002), Case study on Marcopper Mining and the Marinduque Disaster

Aside from chronologically discussing the background as to how the Marcopper Mining came to be as well as it's devastating effects on the Marinduque province, Couman in this case study had pin pointed several vital factors regarding Placer Dome significant issues. These are the following:

- 1) Placer Dome Consistently Ignores Best Practice, Consultants' Advice, and Government Directives on Calancan Bay, Mogpog River, Boac River and Dams and Structures.
- 2) Placer Dome Not Transparent, Fails to Disclose to Local Stakeholders "information relevant to their concerns"
- 3) Placer Dome Insists on Marine Dumping Against the Wishes of Local Stakeholders Placer Dome delayed the clean-up of the Boac River for 6 years by insisting on dumping the tailings in the ocean against the express wishes of the people of Marinduque and the Philippine Government.

4) Placer Dome left the Philippines in December 2001 without fulfilling commitments made to the Office of the President following the tailings disaster in 1996, and in disregard of a government order of October 2001 to fix dams and structures whose collapse threatens another ecological disaster and loss of human life in Marinduque.

#### Magtubo CA., (2018), The Marcopper Mining Incident 2 Decades Later

It has been discussed in this paper by Magtubo how two decades later, much of the damage left after the Marcopper mining incidents in the MIMAROPA region remained visible, for instance, the muddy wastelands that stretch far, and blackened skins of residents who unfortunately came into contact with toxic tailings. Likewise, people in the area continue to suffer the effects of the mining tragedy as evidenced by health problems and the call for stringent environmental solutions becomes even more imperative. With this, the regional DOH drew up a long-term plan into rehabilitating both the environment and the affected people. The plan includes the mine-out areas in Marinduque through the creation of a Carbon Neutral Garden and Neutral Park.

Furthermore, Magtubo reported as to how the DOH regional office partnered with the Marinduque State University to implement a program planting a special type of bamboo called 'Beema' in the affected areas to absorb toxic pollutants.

#### Mayuga J., (2017), A Nightmare that must never happen again

Mayuga, in this article had featured the advocacies of the late Environment Secretary Regina Paz L. Lopez and its relevance towards the Marcopper Mining case. Here it was illustrated how Lopez stresses the damage caused by what is considered the worst mining disaster in the Philippines—and why she is against irresponsible mining. Lopez has repeatedly said she is not antimining but is definitely against irresponsible mining, which companies rake huge profit while people in the communities suffer. Sadly, what had happened to Marinduque, once a host to a large-scale copper mine, changed the lives of its residents, who have since been waking up every day to a reminder of the nightmare that happened more than 21 years ago alongside with its decade long effects.

#### Dizon N., (2019), The Marcopper Mine Spill and the unending wait for Justice

Dizon narrates and once again writes about the long term and devastating effects of the tragedy of the Marcopper Mining and shared his thoughts and sentiments as to how the people of this island province have endured the brunt of the worst mining disaster in the country, but the bigger heartbreak in their two-decade-long quest for justice might just be the wait for redress that is not sure to come. He added how there is nothing more tragic than to hear stories repeatedly told, but nothing done. It's been 23 years since March 24, 1996, when a badly- sealed drainage tunnel in Marcopper Mining Corporation's Taipan pit burst, spilling 1.6 million cubic meters of toxic mine tailings that choked Boac River, flooded villages and killed marine life. Until then, Marinduque had changed its normal pace.

# Coumans, C. (2002). Marcopper Mining and the Marinduque Disaster. Mines and Communities.

The author, Catherine Coumans, traces the history of Marcopper Mining Disaster started the year it was established. The involvement of the Placer Dome's management in the environmental issues in the province of Marinduque was mentioned by the author specifically the extensive geological mapping and drilling. She significantly highlighted the impacts of tons of mine tailings to the environment, health, welfare, and occupation of people living near the polluted area. The author also discussed the denial of Placer Dome for the responsibility or the accountability to the effects of the spread of the toxic waste in Calancan Bay, Mogpog River, Boac River, dams and structures. The continuous mining resulted to a massive property damage and loss of human life. Also, the author included the social opposition which is undoubtedly a significant one to discuss with. It is clearly stated that the people of Mogpog strongly opposed to the plan of building an eathen dam as it fears them given the possible impacts it may bring. But then again, they continued despite the strong oppositions. After being discussed the effects of Marcopper miine tailings, the author recognized then the outcome of the solidifying nature through each of one voice as Marinduqueños seeking for justice. Unfortunately, Placer Dome abandoned their responsibility in resolving the chaos they made, and they left nothing but a threat to the lives of people of Marinduque. The author also carefully examined the five issues concerning still in the failures of the management of Placer Dome.

Dizon, N. (2019). The Marcopper Disaster: A tragedy that continues in people's veins. Vera Files.

In this article, Dizon focused on the effects of historical pollution not merely on the environment but to people's health as well. As Dizon reported the Marcopper mine disaster happened twenty three years ago, he then also conducted an interview to one of the most affected victims of the tragedy, Raquel Logatoc, as He provided concrete information about the effects of mine tailings that as to what the title suggests, it continues in people's veins. It caused skin irritation, fatigue, and body pains to adults and children living in the affected communities. Other than that are the harmful substances or the heavy metals that made them even more suffer. Dizon included the most needed information as readers will gain knowledge and health and safety awareness. This information is no other than but the doctors' initiatives about the level of heavy metals in Mogpog, Boac, and Santa Cruz. These town had been reported as the most affected areas of Marcopper's mine wastes. And it is clearly stated that there were six heavy metals found contaminating the environment and which humans can ingest: lead, arsenic, mercury, cadmium, copper, and chromium or LAMCCC. The mine tailings containing heavy metals that caused environment's contamination needs to be investigated by the experts as it shows possible relation with the delayed development of children and a number of residents dying of end-stage renal failure. Knowing these facts concerning with people's health, Dizon addressed the problems regarding with the rehabilitation of the environment. He pointed out the lack of funds for rehabilitation as Caballes and Lilies stated. Also, he added Couman's statement that the mine sites serves as the source of the worst environmental impact. These mine sites need to immediately be rehabilitated. And as people reminisce the Marcopper Mine Disaster twenty-three years ago, Dizon did not miss the chance to once again be reminded of the accountable companies to the historical pollution - Barrick Gold, Marcopper Mining Corp., and Placer Dome - that still a threat to everyone's safety and health.

# Dizon, N. (2019). Disaster: A Tragedy that Continues in People's Veins. https://news.abs-cbn.com/spotlight/04/04/19/the-marcopper-disaster-a-tragedy-that-continues-in-peoples-veins

The author, Nikku Dizon is a freelance journalist who writes an in-depth report about the controversial Marcopper case. In the reports, the author talks about the communities who are still sufferings up until these days cause by the mine tailings. Dizon asserts the management and everyone who are responsible for the tragic incident of Marcopper mining disaster. The author

listed down and awakens all the pending cases that were still stack in the court, seems like a turtle and no progress at all. This is written specifically written for everyone who needs to know the state of Marcopper and the province. Dizon's in-depth report was a very useful and valuable source for our study because of its currency.

#### Jones, (2019). Environmental justice: case study Marcopper in the Philippines.

https:/://umich.edu/~snre492/Jones/marcopper.htm

The author, Jones, made an Environmental case study about Marcopper disaster in Marinduque. The author talks about the history of Marcopper, when did it started, how it started, who manages the corporation and the events before and after the disaster. Jones also cited different authors and people which supported his study. This study is very helpful to those researchers who wish to study Marcopper Mining disaster like me. It is also very sorceful because it contains the information from different departments which has something to do with Marcopper.

#### Jones, EJ (2019). Environmental Justice Case Study Marcopper in the Philippines.

The study presents information that points to Marcopper Mining Corporation that was managed and controlled by Placer Dome. Inc, the 5th largest mining company in the world. The author discussed the innumerable troubles; serious health and environmental problems of the mining corporation that have placed the community at risk. The impact of Mining that polluted waterways, killed fish, and flooded agricultural fields. The author provide detailed analysis for the internal and external factors, the unethical issues involved in the case, provide solution that can help in the rehabilitation of the affected community and the best reccomendation in addressing the issue. The author of the study includes list of sources cited. It provides detailed information, various factors, facts about the controversial mining corporation in Marinduque.

#### Coumans, C (2002). Case Study on Marcopper Mining and the Marinduque Disaster

The author present records of Marcopper Mining Disaster and the involvement of the Placer Dome's administration in the environmental issues. The author highlighted the impact of tailings on human beings living near the polluted area. The author discussed the denial of Placer Dome for the responsibility to the results of the unfold of the toxic waste in Calancan Bay, Mogpog River, Boac River. The author talks about the continuous mining resulted to a large property harm and

loss of human reaources. The author of the study provides factors , facts about the marcopper mining.

Pupuwa Penitence: A Piercing Sacrifice of Women

ANNOTATED BIBLIOGRAPHY

Social practices, rituals and festive events

The article talks about what is social practices, rituals, and festive events. It also describes how these practice and events are so important to the people and how and where it takes place on people's lives. Likewise, the article gives examples or forms of a social practice, rituals and festive

events, and this is why pupuwa is under it's category because its form is a worship rites.

Pupuwa Ritwal

retrieved from

https://www.unescoichcap.org/kor/ek/sub3/pdf\_file/domain3/067\_Pupuwa\_Ritual.pdf

The article is about the pupuwa ritual which is accorded in social practices, rituals and festive events category. It mainly describes how pupuwa was observed, the use of pupuwa leaves and how it is done in Gasan, Marinduque.

Marinduque- Lenten Mecca of Southern Tagalog

The article talks about the beauty of Philippines within. And one of the beautiful province in the Philippines is Marinduque. In the article, the author states facts and information about Marinduque being the heart of the Philippines, its geography, and many other things.

A Guide to Understanding Holy Week

retrieved from https://www.0.discoverapp.com/http/www.olm-parish.com/Triduum.htm

In the article, the writer states what is holy week and what importance it gives to the people who celebrate it. It also gives information about the triduum and other liturgical celebration.

MacKinnon, Grace. (2003). "The Meaning of Holy Week."

The author is a syndicated columnist and public speaker on Catholic doctrine. The writer sincerely describes and tell what is holy week and how it is related to Jesus life on Earth. In addition, she also states different activities or events held in each of the week.

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#### Duignan, Brian. (ND). "What is Holy Week?"

The writer is a Senior editor at Encyclopedia Britannica. His subject areas include philosophy, political theory and religion. He stated in the article the meaning of Holy week and stated the week of special significance for Catholics.

#### Sapungan, Rene. Priest of Gasan. Personal Interview, 17 December 2020.

Fr. Rene Sapungan is currently an in-charge priest in Gasan. He discussed what is Pupuwa ritual and why the women devotee started doing this kind of ritual or penitence. He stated that the devotee is asking for a favor to God that's why they are making a sacrifice. Fr. Sapungan talks about how wonderful pupuwa is and its connection to the faith people have within themselves.

#### Mason, Soledad. Pupuwa devotee. Personal Interview, 18 October 2020.

Mrs. Mason was a devotee of Pupuwa since 1991. She discussed that she joined pupuwa because of her personal choice. She's doing the ritual because of her heartfelt gratitude to the blossoming health of her family. She also talks about how Pupuwa ritual changed her views in life and her repentance to the lord.

#### Malimata, Rosalinda. Pupuwa devotee. Personal Interview, 18 October 2020.

Mrs. Malimata was a pupuwa devotee for almost seven years. She joined pupuwa because of her son. She talks about her son's condition and illness which is hepatitis. She discussed that when her son graduated college, he couldn't passed the medical examination. Because of this, she decided to join pupuwa to pray for his son's well -being. She said that nothing is really imposible when you pray and ask for help and blessing, because miracle as it may suppose, her son passed the medical examination and did have a job and got married.

Caving System: Archeological Facts of selected caves in Marinduque

ANNOTATED BIBLIOGRAPHY

2- wheel adventures PH, (2019), Bagumbungan Cave- Underground River Cave System in

Marinduque | Largest Angel Wings

This documentary shows a visual and description of Bagumbungan Cave in Marinduque. It is

stated here that Bagumbungan Cave includes in class II with Underground River and a lot of

awesome rock formations. The said documentary inform people regarding some areas that are still

restricted and unexplored, as well as the things to be experience in getting inside the cave. With

that said, this provides a transparent background which everyone could refer to accomplish a

written document like this in depth report.

Danijela Avramovic, Dragan Spasic, The Importance of Cave Management for their Nature Values

Conservation, 2008

This paper provides studies and discussion that has something to do in relation to the most valuable

and sensitive parts of the cave system. This discussed the significance of caves in the nature and

proper cave management. The discussion goes along about the climate parameters of caves, the

nature values of caves, the activities that endanger caves, management of natural values of caves

and examples from practices which done in caves. This paper is in great help because related and

accurate information about the topic of caving system is provided.

Lakbay Lloyd, Magnificient MARINDUQUE, 2016

In this article, the author firstly provides geographical facts about Marinduque. It provides detailed

facts and great experiences of travelling particularly by sharing photos of the place. The article

also provides a catchy overlook upon readers of what the place might look like by describing

cultures, describing spot destinations and an exciting place to visit. The article mostly focuses on

the beautiful attractions the place had, including caves that is one of the wonderful experience that

tourist must try on. This article truly implies a detailed description about Marinduque and

recommended a way to easily get an experience on the province.

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#### National Museum Press Release, Cultural Properties Division

In this article, the author conducted an article about the Cave Guide Training that was held in Marinduque on April1-3, 2014 by Mr. Angel P. Bautista, Acting Assistant Director and Curator II of the Cultural Properties Division. The site inspection was also held in the Municipality of Torrijos by Mr. Bautista and it resulted in the discovery of shell midden areas in opening or in the mouth of cave as well as in the inner chambers.

#### Philippine Island Tour, Mystical Bathala Multiple Caves in Marinduque

This is another useful article; the author serves as the informant by providing details about the Bathala cave in Marinduque. This provides descriptive details on where the said cave is exactly located, the physical appearance of the caves including archaeological objects to be found inside. It also provides images that could be a proof

of legitimacy that the cave is really amazing. The article brings excitement to the readers to try visiting the caves.

#### William B. White, Encyclopedia of Caves (Third Edition), 2019

This journal provides detailed background information among people who has interest in caves. The journal is provided for whom work requires them to know something about caves and the biota that inhabits them. Caves touch on many scientific interests in geology, climate science, biology, hydrology, archaeology, and paleontology, as well as more popular interests in sport caving and cave exploration.

#### PUTONG: Flora and Fauna in the Culture and in the Environment of Marinduque

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Estadilla, F.M. (no date), Putong/Putungan. Social Practices and Festive Events, 146

At this cite we can see the list of Festive events and other social practices here in the Philippines and also in other countries. In just one click we can take a look on how those practices works just like for example is the Putong in Marinduque.

Imrida, (2003), The Tubong/ Putong Ceremony of Marinduque, Philippines, Retrieved from the Mixed Culture: http://www.thrmixedculture-com.cdn.ampproject.org

The article says that Tubong or Putong is a ceremony indigenous to the island of Marinduque, Philippines. Literally the word "putong" means to crown and it is a song of thanksgiving, hope and prayer for a long, blessed life. It is commonly performed to welcome guests and to wish them good life, health and luck. It is also done during birthdays, anniversaries, graduations or any special events that a person is thankful of and praying for a blessed path in life

Lancion, J, J, et. al, (2019), Marinduque: Putong, 'Morion, arrowroot and more, Retreived from inquire. Net: http://www.newsinfo-inquirer-net.cdn.ampproject,org

The article explains that the island comes to life during lent as more than 50, 000 local and foreign tourists come down to witness the parade of the Morions. It gives some brief history of what is going on during the Lenten season in Marinduque. It explains how putong are being associated in the celebration of the Lenten season which are being visited by many tourist coming from different provinces and countries. It also cite some examples of delicacies and pasalubong like arrowroot found in the province.

Turner, V. (1996), The Ritual Process- Structure and Anti-Structure

The Ritual Process has acquired the status of a small classic since these lectures were first published in 1969. Turner demonstrates how the analysis of ritual behavior and symbolism may be used as a key to understanding social structure and processes. He extends Van Gennep's notion of the "liminal phase" of rites of passage to a more general level, and applies it to gain understanding of a wide range of social phenomena. Once thought to be the "vestigial" organs of

social conservatism, rituals are now seen as arenas in which social change may emerge and be absorbed into social practice.

Viray, B, L, (No Date), Where is the Crown?: Dancing The Putong/Tubong, Philippine Humanities Review,

This article investigates how dance companies like the PASACAT Philippine Performing Arts Company(San Diego, California) have translated the crown(Putong/Tubong) ritual into a staged choreography. The first section presents the "structural units' of Putungan based on the company's filmed dance taken from Youtube. The succeeding section relates the staged choreography or " a dance realization' with reference to its original ritualistic contexts and social function or "dance concept". Then finally, the essay argues that the most significant motif in the Putong/Tubong ritual has vanished, specifically, the sense of touch during the coronation section through which the participative element is enacted.

Mahindra, A. (2020), All You Need To Know About Flora And Fauna

In this article, the importance of Flora and Fauna for our ecological system is examined in detail and examples for Fauna and Flora are given at the end.

# PROPAGATION OF KWATINGAN OR BAYOG TREE: AN ACTION ON THE DECLINING NUMBERS OF ENDEMIC KWATINGAN OR BAYOG TREE OF MARINDUQUE

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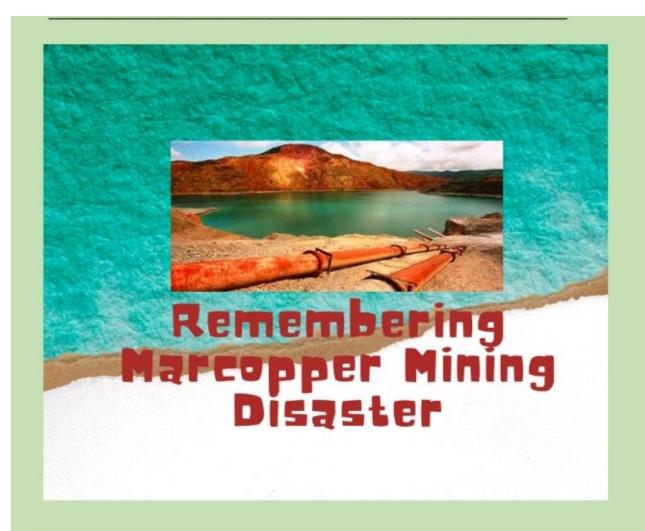
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Castaneda, Jennifer."Propagation of Bayog Bamboo in Culm Cutting Different Growing Media." Researcher's Special Journal (2018), 254-325.

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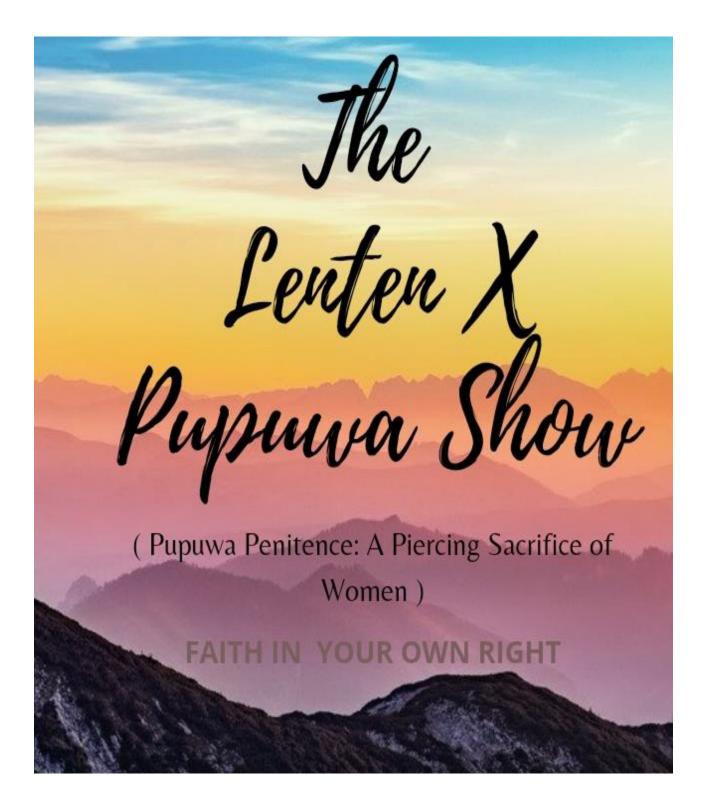
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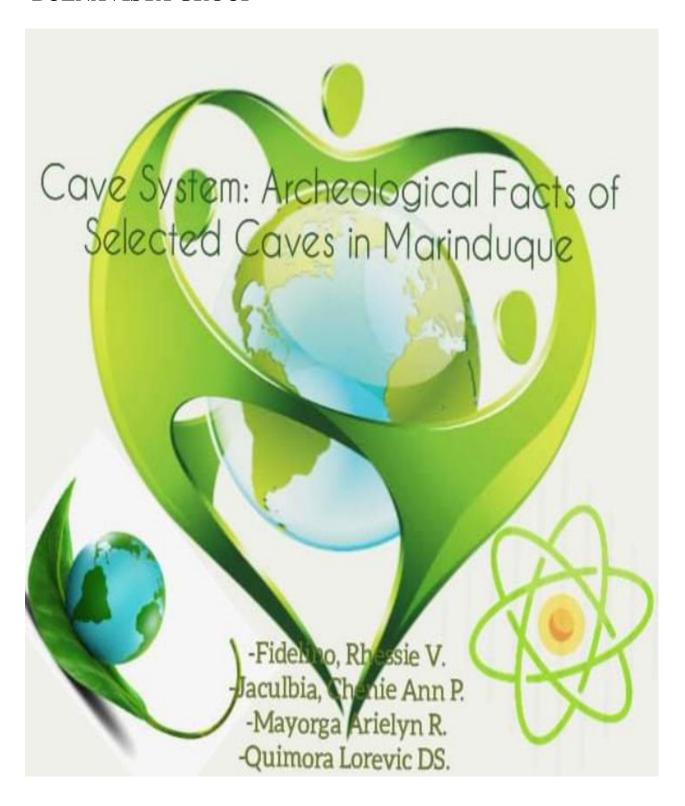
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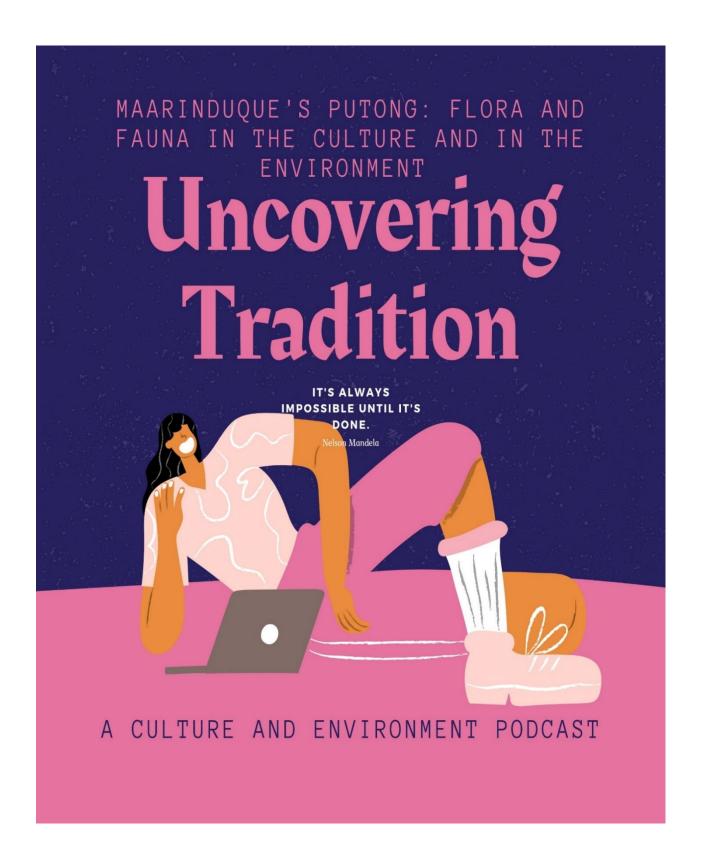
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